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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,762	06/30/2003	Karl H. Mauritz	884.925US1	5893
21186	7590	10/17/2006	EXAMINER	
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.			LU, JIA	
P.O. BOX 2938				
MINNEAPOLIS, MN 55402			ART UNIT	PAPER NUMBER
			2611	

DATE MAILED: 10/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/612,762

Applicant(s)

MAURITZ ET AL.

Examiner

Jia W. Lu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) 30-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19, 21-23, 25-29 and 33-35 is/are rejected.
- 7) ☒ Claim(s) 20 and 24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 June 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date. _____   | 6) <input type="checkbox"/> Other: _____                          |

***Election/Restrictions***

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Group I, claim(s) 1-29, 33-35, drawn to a one embodiment of a DC offset device.
- II. Group II, claim(s) 30-32, drawn to another embodiment of a DC offset device.

The inventions are distinct, each from the other they represent different and distinct methods for operating a DC offset device that, and there would be a serious burden on the examiner if restriction is not required because the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

During a telephone conversation with David Black on 10/11/06 a provisional election was made to prosecute the invention of group I, claims 1-29, 33-35. Affirmation of this election must be made by applicant in replying to this Office action. Claim 30-32 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

**DETAILED ACTION**

***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the transistor in claims 6, 10, 17 as well as the capacitor in claims 13, 15 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
1. Claims 1, 3, 4, 5-11, 21, 22, 23, 26, 28, 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent 4,641,324, in view of US patent 4,926,442, further in view of US 4,736,391.
- a. Regarding claims 1, 4, 5, 21, 22, 23, 26, 28, 29, '324 shows a DC bias compensation circuit comprising a unit (figure 6, elements 44, 46, R3, R4) for generating a feedback signal to the input terminal (figure 6, element 42), and a second amplifier to compare the received signal with a reference potential (element 48). While the unit for generating the feedback circuit does not include a peak detector and a comparison amplifier, such an arrangement is well known in the art, such as shown in '442 (figure 2, elements 30 and 34 and figure 3, elements 42, 44). It would have been obvious to one ordinarily skilled in the art to use this arrangement in the circuit of '324 in order to efficiently monitor the peak to peak amplitude of the input signal and provide a greater degree of flexibility and control to the system. Further, while '324 does not show the use of a resistor between the feedback signal generator and the input

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terminal, '391 shows this (figure 5, element 524). It would have been obvious to one ordinarily skilled in the art to use a resistor in the feedback loop of '324 in order to provide impedance between the feedback signal generator and input.

- b. Regarding claim 3, '324 shows a capacitor coupled to the input terminal (figure 6, element 40).
  - c. Regarding claim 6, it is inherent that a transistor can be used to provide resistance (official notice).
  - d. Regarding claims 7, 11, '324 shows a filter (figure 6, element 60) coupled to the feedback signal generating circuit of claim 1 including a first amplifier.
  - e. Claims 8 and 10 reads on the limitations of claim 7 above.
  - f. Claim 9 reads on the limitation of claim 1 above.
2. Claims 2, 25, 27 are is rejected under 35 U.S.C. 103(a) as being unpatentable over US patent 4,641,324, 4,926,442, 4,736,391, further in view of US application publication 2004/0190650. While referenced uses for claim 1 do not show a reference potential to be generated by means of a max and min level detector through a voltage divider, such a feature is well known in the art, as shown by '650 (figure 8, elements 104, 106, 108, 111); While '650 uses summing and scaling means to generate the reference potential instead of a voltage divider, such a difference is a matter of design choice and the use of a voltage divider is also well known in the art (see '442, figure 8). It would have been

obvious to one ordinarily skilled in the art to generate the first reference potential through the max and min values of the input signal in order to provide a most appropriate reference point for DC offset compensation.

3. Claims 12, 14, 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent 4,641,324, 4,926,442, 4,736,391, further in view of US patent 4,229,831.

a. Claim 12 reads on the limitations of claim 1 above; further, while none of the references used above show the use of a driver having a primary output terminal which is connected to the primary input terminal of the receiver, '831 shows this feature (figure 1, element 14). It would have been obvious to one ordinarily skilled in the art to use a driver to guide a signal to the receiver when an input is necessary.

b. Claim 14 reads on the limitation of claim 11 above.

c. Claim 16 reads on the limitation of claim 9 above.

d. Claim 17 reads on the limitation of claim 10 above.

e. Regarding claims 18 and 19, it is inherent that the connection of two points in a circuit can be through a cable, or a backplane (official notice).

4. Claims 13, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent 4,641,324, 4,926,442, 4,736,391, and 4,229,831, further in view of US 4,462,098. The inclusion of a capacitor in a filter is well established in the art, see '098 (column 3, lines 35-43). It would have been obvious to one ordinarily skilled in the art to include a capacitor in the filter in order to provide buffer.

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5. Claims 33 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent 4,641,324, 4,926,442, 4,736,391, further in view of US patent 6691203.
  - a. Claim 33 reads on the limitations of claim 1, further, while above references do not describe the use of a RISC, such a use is well known in the art (see '203 column 6, lines 5-15), and it would have been obvious to one ordinarily skilled in the art to use a RISC with the system described in above references in order further simplify the system.
  - b. Regarding claim 34, '923 describes an output signal having an unbalanced duty cycle (column 6, lines 5-15, PWM), and it would have been obvious to one ordinarily skilled in the art for the receiver in '324 to receive a PWM signal to allow DC level control.
  - c. Regarding claim 35, '324 shows a single-ended signal.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 2, 27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it



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pertains, or with which it is most nearly connected, to make and/or use the invention. On page 8, lines 6-13, the  $V_{ref}$  as generated by the high and low peak detectors refers to the "second reference potential" in claim 1. However, claim 2 refers to the voltage generated by the high and low peak detectors as "first reference voltage".

### ***Allowable Subject Matter***

Claims 20, 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jia W. Lu whose telephone number is 571-272-6042.

The examiner can normally be reached on Mon- Fri, 10:30AM-6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh M. Fan can be reached on (571)272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jia Lu  
Examiner  
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CHIEH M. FAN  
SUPERVISORY PATENT EXAMINER